

08/11/00
jc904 U.S. PTO

08-14-2000

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Attorney Docket No. 2101329-991100

EXPRESS MAIL NUMBER: EL389645538US

DATE OF DEPOSIT: August 11, 2000

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August 11, 2000

JC675 U.S. PTO
09/637138

08/11/00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

UTILITY APPLICATION TRANSMITTAL LETTER

ASSISTANT COMMISSIONER FOR PATENTS
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ATTN: BOX PATENT APPLICATION

Sir:

Transmitted herewith for filing is the patent application of:

INVENTOR(s): Brain Povolny et al.

FOR: INTERACTIVE PATIENT-PROVIDER DATA SYSTEM AND
METHOD

Enclosed are:

- [14] pages of specification
- [4] pages of claims
- [1] page of abstract
- [9] sheets of informal drawings
- [X] Declaration and Power of Attorney (unsigned)
- [] Assignment of the application with Recordation Cover Sheet
- [] Information Disclosure Statement
- [] Preliminary Amendment
- [] Small Entity Declaration
- [X] Other: acknowledgement postcard.

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Respectfully submitted,

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2101329-991100

INTERACTIVE PATIENT-PROVIDER DATA SYSTEM AND METHOD

Field of the Invention

The invention relates to methods and systems uniquely designed for and utilized in the practice, administration, or management of a health care provider practice, including billing, and patient medical records and management of records of diagnosis or treatment. Also included are methods and systems for patient interaction.

Background of the Invention

Productivity growth is the key ingredient for a low inflation, growing economy. The service industries are the most refractory to productivity gains. And, within the service sector, the health care industry has been the most difficult area in which to increase productivity.

A need exists to automate and enhance the information exchange between the patient and the provider. This would facilitate a more efficient utilization of the provider's time and the patient's time, while reducing the possibility of errors.

Summary of the Invention

The invention relates to a method and system for collecting, managing and delivering patient data, as needed, as scheduled, or as requested, to the patient, and to providers.

One aspect of the invention is a method of presenting patient data to a requestor. The requester and recipient can be one and the same; in most cases the requester/recipient is a patient, but sometimes it is a provider. This includes the steps of querying at least one data base for patient - specific data, and determining the access status of the requestor. The method next includes selecting records that satisfy the query and are visible to a selected recipient, and presenting the data to the recipient from one or more selected data fields, and frequently hundreds of data fields, in accordance with one or more, and frequently hundreds of applets, objects, or templates.

The method can be and frequently is web based, with the requestor requesting patient data from a browser through a web server, or the recipient receiving the data through a web server on a web browser. The system presents the selected data fields with one or more objects or templates in a form chosen from among clinical records, treatment records, diagnoses, treatment plans, appointment reminders, recalls, bills, payment overdue reminders, no shows, greetings, prescriptions, referrals, and referral reports. The patient data may include interactions with third party payers, payment information, copayment and deductible information, and aggregation of payments, copayments, and deductibles, especially in the context of family billing. A further aspect of the invention is a patient relationship management capability managed by the method and system of the invention.

The data is presented to the recipient in electronic or hard copy form, and the requestor is typically a patient and the recipient is also typically a patient.

A further aspect of the invention is determining the access status of a requestor or source by matching an identifier and a password to values of the identifier and password (or id and pin) stored in a repository or database. In one scenario, the requestor or source is a patient, and the patient further supplies elements of data in response to queries, these elements are matched against database entries to grant or deny access. The elements matched against database entries include one or more of birthdate, social security number, and identifying numbers. In a still further embodiment, the system can prompt the user for additional data until a match is established.

Patient data may be accessed, on the provider side, through an intranet, a secure internet, a LAN, or a WAN.

In one further embodiment of our invention, the data within the database includes an array of blocks of time set aside for specific procedures, where each of the procedures has a unique scheduling code. Each patient needing an appointment for a procedure also has a scheduling code where the scheduling code for the patient's required procedure corresponds to the

scheduling codes for the procedures to be performed. To schedule a procedure, the patient schedules a block of time for the procedure by selecting a block of time having a scheduling code corresponding to the patient's scheduling code.

A still further aspect of the invention enables a health provider to receive payment on behalf of a patient, post the payment information into patient accounts, track copayments and deductibles for a patient, and bill copayment and deductible balances to a patient. A further aspect of the billing module includes providing an explanation of copayments and deductibles to the patient. A still further embodiment of the invention includes grouping and aggregating deductibles and copayments by patient families, and reporting deductibles and copayments grouped and aggregated by patient families to a family member.

A further aspect of the invention is a system for presenting patient data to a requester. The system uses an application server and connects to a database server and a web server.. The connection between the application server and the database server is via an open database connectivity module (such as ODBC, which is used solely for purposes of illustration). To be noted is that the various servers, that is the database server, the application server, and the web server, along with the open database connectivity module, are different software elements, but may reside on the same or different hardware elements.

The patient data may include interactions with third party payers, payment information, copayment and deductible information, and aggregation of payments, copayments, and deductibles, especially in the context of family billing. A further aspect of the invention is a patient relationship management capability managed by the method and system of the invention.

The system is controlled and configured, e.g., by software running on the one or more computers to query at least one data base through the open connectivity module for patient and provider-patient specific data,. The system is next controlled and configured to determine the access status of the requestor, and to select records that satisfy the query and are visible to the requestor. The system then presents data from one or more selected data fields to a recipient in accordance with one or more objects or templates.

The system is configured through software and a web server to both receive requests for patient data over a web browser through a web server, and to deliver data through a web server on a web browser.

A further aspect of the system is tools repository, as a web-based tools repository, which may reside in one or more databases, and that includes objects, forms, templates, and applets. The system is configured to select at least one of the objects, forms, templates, and applets based upon the query and present the selected data fields with the one or more objects, forms, templates, and applets in a form chosen from the group consisting of clinical records, treatment records, diagnoses, treatment plans, appointment times, recall lists, patient payments and charges, insurance payments and charges, greetings, prescriptions, referrals, and referral reports to the recipient. The reports or output may be in hard copy form or in soft copy form.

One aspect of our invention is a method of and system for improving the efficiencies of medical and dental practices through a web integrator and web-based management tools to enable health care providers to make patient information available to their patients online. One way this is accomplished is by enabling patients to connect to their provider's web site and view appointments and detailed patient information from a password-protected screen.

A still further aspect of our invention is a patient-driven system to collect patient information, including by way of illustration and not limitation, patient histories, questions for the provider, and e-mail addresses, without burdening office staff and thereafter send automated, customized e-mail correspondence, as billing reminders and appointment reminders to patients.

A still further aspect of our invention is that the method and system permits interaction with legacy practice management and database management systems so that it extracts information to display to authorized requesters without any new data entry.

In a preferred embodiment, the system resides on a computer associated with the provider, as a computer in the provider's office, and serves to extract relevant data (such as health histories,

health status, appointment and account information) from the provider's legacy practice management software database and upload it to a web server, e.g., on demand, when scheduled, or each night. Patients log onto the provider's web site to access this data. This web-integrated information is made available to patients with a high degree of security, for example, by password-protected screens and browsers, using security and encryption, on unique secure domain web sites.

A further aspect of the invention is linking multiple providers, including providers in different locations or even different organizations, on a secure internet or intranet, a LAN, or a WAN.

The system and method of the invention can use various patient-based data entry systems, such as health history and e-mail address collection systems, and reminders of questions to ask the provider. One can be installed on a terminal accessible to patients in the waiting room, and the other can be accessed from the provider's web site. This enables existing and new patients to enter their health histories, e-mail addresses, and reminders of questions to ask the provider into the system quickly. Another solution encompassed in the method and system of our invention uses the freshly uploaded data from the provider's practice management database to send reminders to all patients with e-mail addresses who have upcoming appointments

The Figures

The invention may be understood by reference to the FIGURES appended hereto.

FIGURE 1 is an illustration of a web connected system of the invention.

FIGURE 2 is an illustration of software and application elements of the system of the invention.

FIGURE 3 is a screen shot of the initialization screen.

FIGURE 4 is a screen shot of an electronic appointment reminder to be sent by the method and system of the invention.

FIGURE 5 is a screen shot of the settings for an overdue payment.

FIGURE 6 is a screen shot of the payment overdue letter sent by the method and system of the invention.

FIGURE 7 is a screen shot of the recall letter sent by the method and system of the invention.

FIGURE 8 is a screen shot of a no-show letter sent by the method and system of the invention.

FIGURE 9 is a screen shot of a Birthday Greetings letter sent by the method and system of the invention.

Detailed Description of the Invention

The method and system described herein enable health care providers to improve the efficiencies and productivities of their medical and dental practices through a web integrator and web-based management tools. These combine to enable health care providers to make patient information, including account information, diagnostic information, treatment information, prescribing information, and referral and referring information available to their patients online.

A further aspect of our invention is a method and system that enables patients to connect to their provider's web site and view this information from a password-protected server on a password protected screen.

In a preferred embodiment, the system resides on a computer associated with the provider, for example, in the provider's office, and serves to extract relevant data from the provider's legacy practice management software database and upload it to a web server, e.g., on demand, when scheduled, or each night. Patients log onto the provider's web site to access this data. This web-

integrated information is made available to patients with a high degree of security, for example, password-protected screens on unique domain web sites.

The system and method of the invention can use various patient based data entry systems, such as e-mail address collection systems. One can be installed on a terminal accessible to patients in the waiting room, and the other can be accessed from the provider's web site. This enables existing and new patients to enter their e-mail addresses in the system quickly. Another solution encompassed in the method and system of our invention uses the freshly uploaded data from the provider's practice management database to send reminders to all patients with e-mail addresses who have upcoming appointments

Another aspect of the invention is a patient-driven method and system to collect patient information including, by way of illustration and not limitation, patient histories, questions to ask the provider, diagnoses, referrals, prescriptions, e-mail addresses, and the like, without burdening office staff, and thereafter send automated, customized e-mail appointment reminders to patients and charts to individual providers. The program operates self-sufficiently, interacting with legacy databases without additional work for the office staff.

In a preferred embodiment of the invention, at least two patient data collection systems: are utilized. One patient data collection system is installed on a terminal accessible to patients, for example, in the waiting room, and one patient data collection system is accessible from the provider's web site. This enables existing and new patients to enter their patient data, as described above, into the system quickly. The web-based e-mail reminder system, as well as data display systems for individual providers, use the freshly uploaded data from the provider's practice management database to send reminders to all patients with e-mail addresses who have upcoming appointments, as well as to provide patient charts and information to individual providers. The outputs, including patient charts, pharmacy charts, referrals, and automated e-mail reminders, with templates, objects, applets, features and options, are customizable thru the web server.

A further aspect of the method and system of the invention is patient and procedure specific on-line and web-based scheduling. In this application certain blocks of time are set-aside for specific procedures, typically related procedures or even the same procedure for several patients, or for procedures of the same duration or sequence of durations. In a further refinement, patients are assigned a "scheduling code" allowing them to schedule themselves only within the parameters doctor's office has made available, including, for example, a smart scheduler that takes into account patient's available days for scheduling module, for matching patients with preferred hygienists, physicians' assistants, and necessary visit length. This can be integrated with a "power blocking" capability to allocate units of time to each provider, assistant, procedure, and anesthesia procedures to increase productivity without double-booking.

A further aspect of the invention described herein is a complete web-based practice management solution, including patient relationship management. The solution integrates the services required for a health care provider's practice, including, by way of illustration and not limitation, tracking, billing, fee-to-ledger posting, scheduling, visit preparation and premedication, recall list function, pharmacies associated to a patient, diagnostics, treatment plans, storing x-rays and digital images, morphing images, performing cephalometric or other biometric tracings or analyses, and surgical outcomes, staff assignment, time clock, patient conversations, clinical records, treatment records, association of lab work with specific patients, automatic posting of other procedures linked to any given procedure, appointment reminders, payment overdue reminders, no shows, greetings, prescriptions, referrals, referral reports, hygiene analysis reporting, patient hygiene, diet, and self-administered medication tracking, and practice barometers reports, financial reports, missed appointment reports, and automatic inventory reduction.

The practice management method and system of the invention, which is preferably a web-based practice management solution, will also manage third party payer interactions and relationships, including interactions with the patients.

For example, the practice management application contains objects to facilitate billing insurance companies electronically, even with a narrative option on insurance claims. Additionally,

especially with properly coded checks, the system will enable posting of third party payments to patient accounts, including posting of payments from bulk checks, and tracking of outstanding insurance claims,. A further aspect of the method and system of the invention is assigning insurance benefits to patient; while submitting insurance as a service to the patient, tracking year-to-date benefits and deductibles for patients.

The method and system of the invention also enables billing patient copayment balances promptly to the patient after posting an insurance payment This also includes explaining insurance plan limitations and insurance plan copayment amounts to patients. A further aspect of copayment management is a provision for aggregating multiple-patient family copayment plans, thereby replacing of separate payment and copayment plans and records and plans for each member of the family.

A further aspect of the method and system of the invention is data extraction and manipulation, by third party payer, to evaluate individual plans, preferred provider organizations and/or maintenance organizations to determine which plans are most profitable. This module can also be used to track the percentage of net collections in multi-provider practice.

The software may be written in various languages, such as C++. It uses tools and applications such as ODBC to access the provider's database and extract the data, automatic dial-up and ftp to upload data to our server. Transferred data are stored in a database, such as a MySQL database. The database may be on the web server or on a separate remote server. Access to the data is provided by, for example Perl cgi scripts. This web-integrated information is made available to patients on password-protected screens on unique domain web sites that are scalable, configurable, and customizable for each provider and practice type doctor from site templates.

The software integrates with a variety of legacy databases, including Access databases, Unix, and even DOS-based systems.

FIGURE 1 illustrates a system 1 topography useful in the practice of the method and system of the invention. The system shows three web browsers, 11, 13, 15. One browser, 11, is connected

through an internet service provider, 21, to and through the public internet, 23, to a web server, 41. The other two browsers, 13, and 15, one accessible to patients, 13, at the provider's site, and the other, 15, for the individual provider's use at the provider's site, and connected to and through the provider's intranet to the web server, 41. The web server, 41, is a conventional web server, 41, with conventional web server capabilities and functionalities. The web server, 41, is in communication with an application server, 51, which, in turn, is in communication with a database server, 61. The database server, 61, interacts with one or more databases, 71, 73, and 75. At least one of the databases may be a tools repository that has objects and applets specific to the method and system described herein.

While only two office based terminals, 13, and 15, on a LAN or intranet, 25, are shown, it is, of course to be understood the method and system of the invention is amenable to networking multiple offices in the same practice, and uploading data to and through the web or corporate intranet, 25, from a terminal, 13, or server in one location to and through the web or corporate intranet, 25, to the application and web servers and data servers in another location, and to and through the web to a user in another office, as a satellite office. In this way, the method and system facilitates uploading data from a client's server in a main office to a server having the web server, 41, application server, 51, and data server, 61, contemplated herein, and downloading the data to satellite offices.

FIGURE 2 illustrates the interaction of software elements in a scalable module of the method and system of the invention. Central to the illustrated exemplification of the system and method is a database connectivity module, such as the open database connectivity module (ODBC), 111. This is a module for accessing a database. By using the structure and syntax of ODBC, 111, or a similar tool or application, the user can access files in a number of different databases from various vendors, including legacy databases using the same statements in a program,. In addition to the ODBC, 111, software, or a similar functionality, a separate module or driver is needed for each database to be accessed. The main proponent and supplier of ODBC, 111, programming support is Microsoft.

The method and system is described and illustrated with respect to ODBC. This is not meant to preclude the use of programs offering similar functionality, but merely for purposes of illustration and understanding. ODBC is based on and closely aligned with the Open Group standard Structured Query Language (SQL) Call-Level Interface. In this way programs can use SQL requests to access databases without knowing the proprietary interfaces to the databases. ODBC handles the SQL request and converts it into a request the individual database system understands.

The ODBC, 111, or other application, solution, or functionality, provides an interface between one or more databases, shown in FIGURE 2 as the main database and the e-mail database, and the other modules.

One such module, linking the database connectivity module 111, to the outside world and to other modules is the extractor, 121. The extractor, 121, interfaces with the basic database, 131 and performs necessary data extraction and data recording in fit text files. This includes, by way of exemplification, confirming that names of files conform to the names of tables in the associated database. The extractor also performs utility functions such as text file compression and file transfer on FTP to the server and analysis and file transfer of database entries from data sources (patients, referred providers) to the provider. Another function of the extractor is providing high performance CGI using an HTTP connection. The Extractor is a multithreaded Windows dialog based application.

Other aspects of the system are a scheduler, 141, and a data collector or an e-mail collector, 151. The e-mail address collector module, 151, also referred to as a collector module, 151, allows users, as patients or customers, enter their own e-mail addresses, thereby eliminating data entry by staff, reducing likelihood of mis-typed email addresses.

Additionally, the collector, 151, of the method and system of the invention

* Checks the identity of the user using identifying information including birthdate, social security number or other identifying numbers and establishes a perfect match with the individual in the database.

* Keeps Requesting additional information until such a match is established. E.g. prompts for complete spelling of first, last name, birth date, social security number, name of provider, etc.

* Accepts multiple e-mail addresses for a single record, sorts these addresses according to specific parameters. E.g. "Mother" and "Patient". E-mail addresses identified as belonging to "Mother" will receive billing notification, while an e-mail address belonging to an under-18 patient will not.

* In the database, associates e-mail addresses with specific records.

* Assigns and/or accepts user originated personal identification numbers (PINs).

* Allows users to modify, add or delete e-mail addresses.

* Allows users to modify PINs.

While the collector, 151, is illustrated as an e-mail address collector, and is illustrated in the context of a health provider situation, the collector, 151, of the method and system of the invention has applicability beyond its use in patient waiting rooms or patient homes and beyond a patient relationship management system. The collector, 151, can be used as an end-user data collector, e.g., an end user e-mail address collector, in any business situations where there exists a database and a need to gather e-mail addresses and other data for records in that database.

In one embodiment, described herein solely for purposes of exemplification and illustration and not for limitation, there is provided an application called PTInteractive Genie Master. Genie Master is a web-based tool for doctors and other health care providers to manage their patient relationships, including the content of the reminder mails.

FIGURE 3 is a screen shot of a Genie Master settings screen , where the provider, here “Joe Fiddle, DDS” enters his or her data, including name, telephone number, e-mail address, alternative e-mail address, web site URL, and such options and defaults as credit card payment, appointments, recalls, patient payments and charges, insurance payments and charges, birthday greetings.

FIGURE 4 shows an appointment reminder generated by the method and system of the invention, using the system shown in FIGURE 2.

FIGURE 5 shows the setup screen for generating payment overdue notices, while FIGURE 6 shows an actual payment overdue notice issued by the system.

FIGURE 7 shows an example of a recall generated by the method and system of the invention. This would be generated where the system, scanning a practice’s recall list, determines that a visit or follow-up visit is necessary, but has not been scheduled. Closely related is the “No show” letter illustrated in FIGURE 8, which is generated by the system when a patient is scheduled for a visit, but misses the appointment.

FIGURE 9 is an example of a Birthday Greeting issued by the system.

Of particular importance in a Web-based patient-provider method and system is system security and data security. This goes beyond merely identification codes and passwords, and encryption, and securesocket layers. What is required is actual access blocking. According to our invention, a file may have a field or fields indicating blocking and access, with an enumeration of classes of users or even individual users who may have access to the record. The “Block/Unblock” option allows the user to restrict access. For example, a provider may have patients who request that their information not be on the Web, or the provider may have cases that the system cannot accurately display on the Web because the data has been entered into the database in a non-standard way. These patients’ access can be blocked at this screen.

We claim:

1. A method of doing one or both of collecting patient data from a source and presenting the patient data to a requestor comprising:
 - a) querying at least one data base for patient and provider-specific data,
 - b) determining the access status of the requestor;
 - b) selecting records that satisfy the query and are visible to a selected recipient,
 - c) presenting data to the recipient from one or more selected data fields in accordance with one or more objects or templates.
2. The method of claim 1 comprising the requestor requesting patient data from a browser through a web server.
3. The method of claim 2 comprising a recipient receiving the data through a web server on a web browser.
4. The method of claim 1 comprising presenting the selected data fields with one or more objects or templates in a form chosen from the group consisting of clinical records, treatment records, diagnoses, treatment plans, appointments, recalls, bills, patient payments and charges, insurance payments and charges,, no shows, greetings, prescriptions, referrals, and referral reports.
5. The method of claim 1 comprising presenting the data to the recipient in hard copy.
6. The method of claim 1 comprising presenting the data to the recipient electronically.
7. The method of claim 1 wherein the requestor is a provider and the recipient is a patient.
8. The method of claim 1 comprising determining access status of a requestor or source by matching an identifier and a password to values thereof stored in a repository.
9. The method of claim 8 wherein the requestor or source is a patient, and the patient further supplies elements of data in response to queries, which elements are matched against database entries to grant or deny access.
10. The method of claim 9 wherein the elements matched against database entries include one or more of birthdate, social security number, and identifying numbers.
11. The method of claim 10 comprising prompting the user for additional data until a match is established.
12. The method of claim 1 comprising accessing patient data through an intranet.

13. The method of claim 1 wherein data within the database includes:
- a) an array of blocks of time set aside for specific procedures, each of said procedures having a unique scheduling code, and
 - b) an array of patients requiring a procedure, each of said procedures having a scheduling code as specified in (a); and
- wherein a patient requiring a procedure schedules a block of time for the procedure by selecting a block of time having a scheduling code corresponding to the patient's scheduling code.
14. The method of claim 1 comprising a health provider receiving payment on behalf of a patient, posting payment information into patient accounts, tracking copayments and deductibles for a patient, and billing copayment and deductible balances to a patient.
15. The method of claim 14 comprising including an explanation of copayments and deductibles to the patient.
16. The method of claim 14 comprising grouping and aggregating deductibles and copayments by patient families.
17. The method of claim 16 comprising reporting deductibles and copayments grouped and aggregated by patient families to a family member.
18. A system for presenting patient data to a requester, said system comprising:
- a) an open database connectivity module;
 - b) a data collector module;
 - c) at least one database server connected to said open database connectivity module; and
 - d) a web server connected to an application server, said application server connected to said open database connectivity module;
- said system controlled and configured to
- a) query at least one data base through said open connectivity module for patient and provider-patient specific data,
 - b) determine the access status of the requestor;
 - c) select records that satisfy the query and are visible to the requestor,

d) present data from one or more selected data fields to a recipient in accordance with one or more objects or templates.

19. The system of claim 18 wherein the system is configured to receive requests for patient data over a web browser through a web server.
20. The system of claim 19 wherein the system is configured to deliver data through a web server on a web browser.
21. The system of claim 18 wherein the system includes objects, forms, templates, and applets, in at least one repository, and said system is configured to select at least one of said objects, forms, templates, and applets based upon the query and present the selected data fields with the one or more objects, forms, templates, and applets in a form chosen from the group consisting of clinical records, treatment records, diagnoses, treatment plans, appointments, recalls, bills, patient payments and charges, insurance payments and charges,, no shows, greetings, prescriptions, referrals, and referral reports.
22. The system of claim 18, wherein the system is configured to deliver hard copy data to the recipient.
23. The system of claim 18 wherein the system is configured to deliver electronic copy data to the recipient.
24. The system of claim 18 wherein the system is configured to receive queries from a provider and deliver output data to a patient.
- 25.. The system of claim 18 wherein the system is configured to determine access status of a requestor or source by matching an identifier and a password to values thereof stored in a repository.
26. The system of claim 25 wherein the requestor or source is a patient, and the patient further supplies elements of data in response to queries, which elements are matched against database entries to grant or deny access.
27. The system of claim 26 wherein the elements matched against database entries include one or more of birthdate, social security number, and identifying numbers.
28. The system of claim 27 wherein the system is configured to prompt the user for additional data until a match is established.
29. The system of claim 18 wherein the system is configured to access patient data through an intranet.

30. The system of claim 18 wherein data within the database includes:
- a) an array of blocks of time set aside for specific procedures, each of said procedures having a unique scheduling code, and
 - b) an array of patients requiring a procedure, each of said procedures having a scheduling code as specified in (a); and
- wherein the system is configured to facilitate a patient requiring a procedure to schedule a block of time for the procedure by selecting a block of time having a scheduling code corresponding to the patient's scheduling code.
31. The system of claim 18 wherein the system is configured to receive payment on behalf of a patient, post payment information into patient accounts, track copayments and deductibles for a patient, and bill copayment and deductible balances to a patient.
32. The system of claim 31 wherein the system is further configured to include an explanation of copayments and deductibles for the patient.
33. The system of claim 32 wherein the system is configured to group and aggregate deductibles and copayments by patient families.
34. The system of claim 33 wherein the system is configured to report deductibles and copayments grouped and aggregated by patient families to a family member.

ABSTRACT

Method and system for presenting patient data to a requestor by first querying at least one data base for patient and provider-patient specific data. The system determines the access status of the requestor and selects records that satisfy the query and are visible to the requestor for presentation to the requestor. This data is presented to the requestor or recipient with data from one or more selected data fields in accordance with one or more objects or templates.

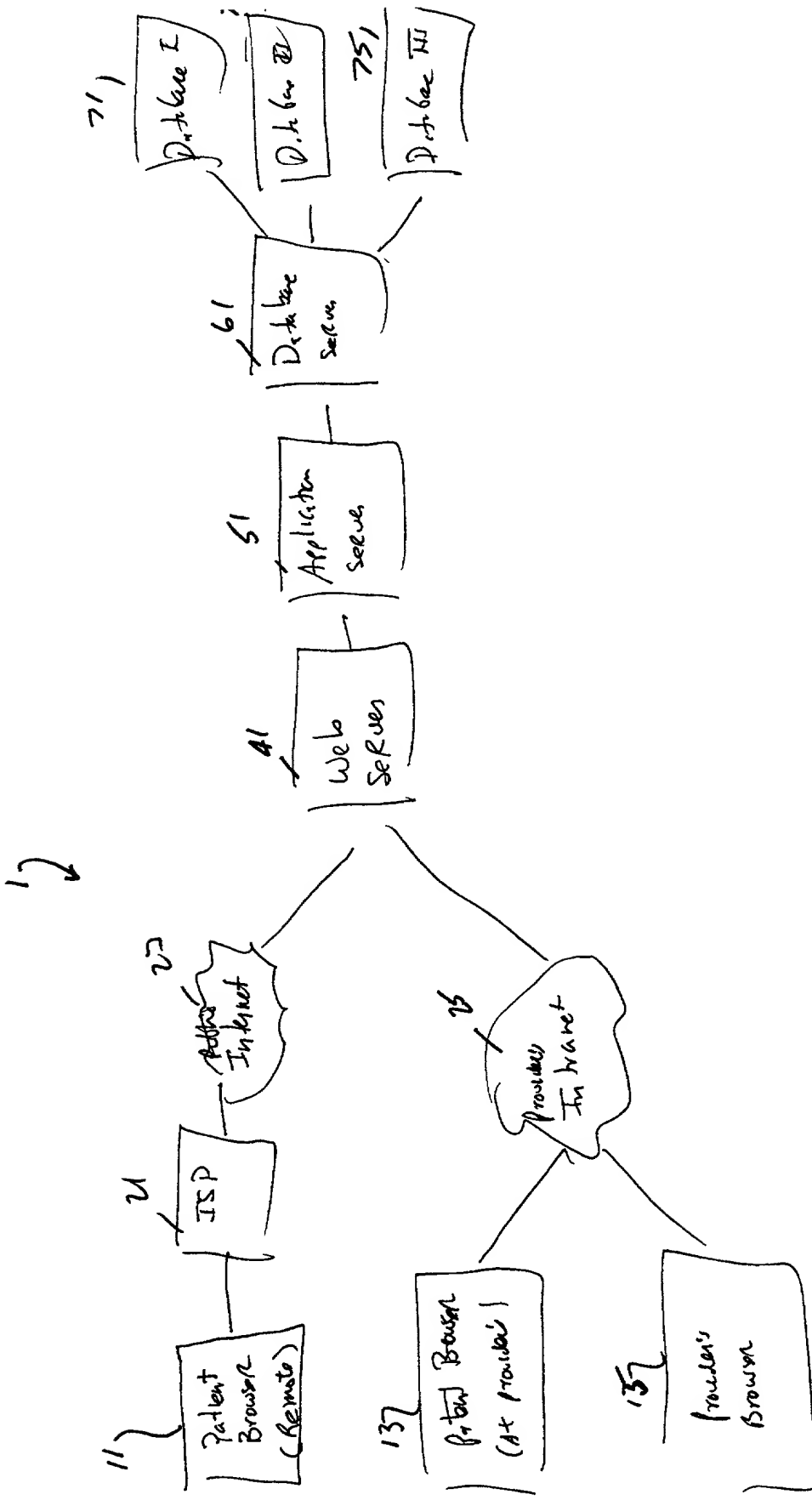


Figure 1

Sesame documentation

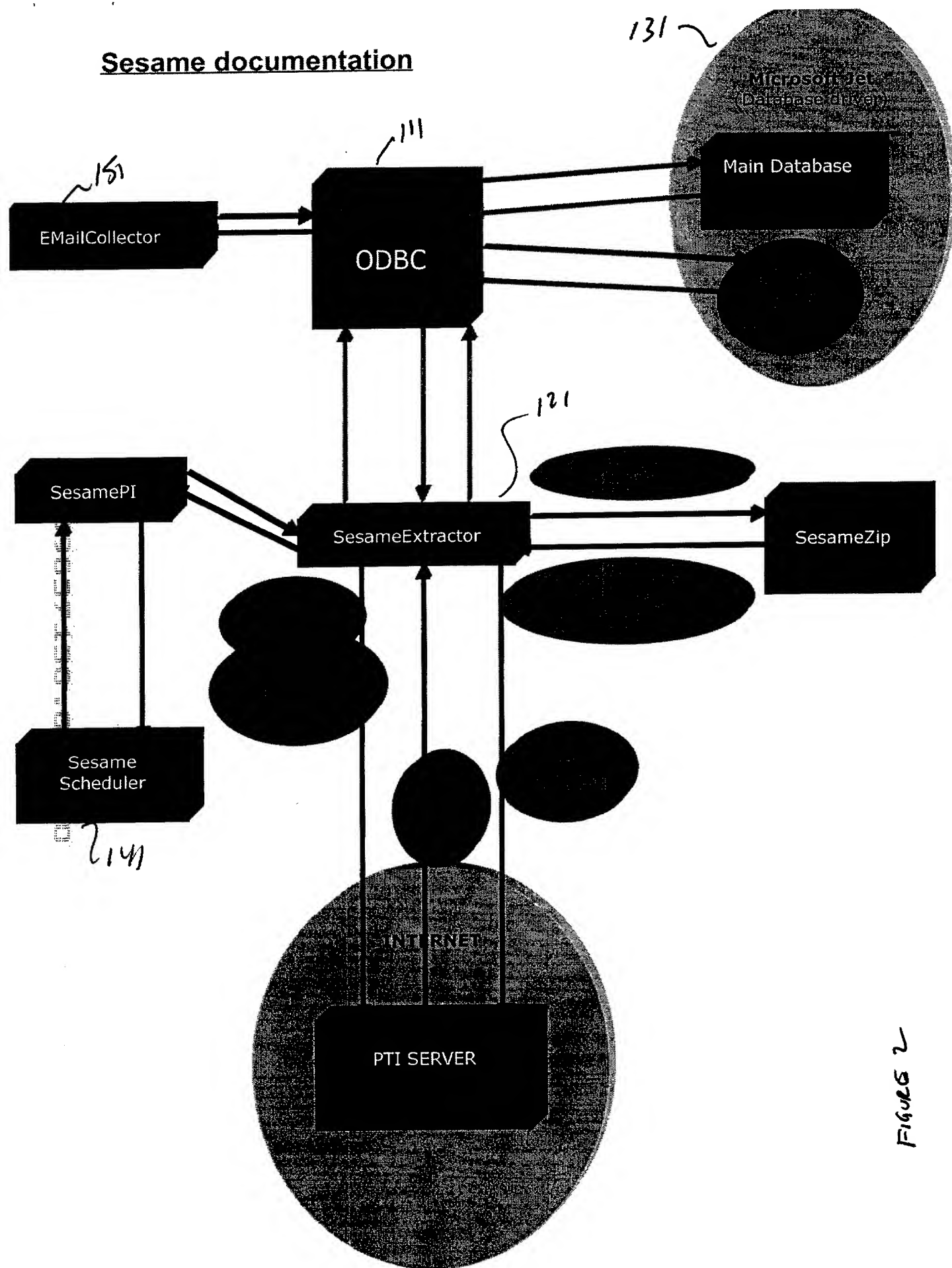


FIGURE 2

Settings - general

If you make any changes to your settings, please remember to select SAVE SETTINGS.

SAVE SETTINGS

Doctor

Joe Fiddle, DDS

Telephone

(408) 320-7528

E-mail address that will
appear in the "From" line on messages to patients

FiddleDDS@padf.org

Second e-mail address
for Pt Interactive to contact office (optional)

FiddleDDS@padf.org

URL for orthodontist's web site

http://padf.org/dental/fiddledds

Credit Card Payment ☒ Enabled

E-mail address for credit card payment notification

FiddleDDS@padf.org

Appointments ☒ Enabled

Recalls ☒ Enabled

Payment Overdue Notice ☒ Enabled

No Show ☒ Enabled

Birthday Greetings ☒ Enabled

Greeting Hello!

Sign Off Wishing you a beautiful smile

Encourage patients to reply by: ☒ Telephone

SAVE SETTINGS

SAVE SETTINGS

Created by



Pt Interactive

Figure 3

Example mail - Appointments

From: FiddleDDS@padf.org
To: jessica@wink.com
Subject: Your orthodontist is looking forward to seeing you!

Hello!

Jessica Baker is scheduled to see Dr. Joe Fiddle, DDS on May 18, 2000 at 11.00 am.

For a map to our office, visit <http://padf.org/dental/fiddleddsmap.html>

Did you know we are moving into a new office in July? It is just around the corner from our present location. We will have almost twice as much space. Our reception area will feature a video games area, as well as a temporary work station for you to pull out your laptop or make calls.

Wishing you a beautiful smile,
Dr. Joe Fiddle, DDS and Staff
(408) 320-7528

Please do not reply by e-mail. Call Dr. Joe Fiddle, DDS' office at (408) 320-7528 with any questions.



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FIGURE 4

Settings - Payment Overdue

If you make any changes to your settings, please remember to select SAVE SETTINGS.

Subject

Payment to orthodontist overdue

Optional Text

Did you know you can view information about your account on our web site? Please visit www.waltonortho.com.

☒ Random text

Also apply this optional text to

☐ Appointments

☐ Recalls

☐ No Show

☐ Birthday Greetings

Number of days (including Saturday and Sunday) after roll date that reminder should be sent.

Age at which patient should receive billing and account mails (if this feature is enabled)

Late Charge Amount (if any) \$

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Pt Interactor

FIGURES

Example mail - Payment Overdue

From: FiddleDDS@padf.org
To: jessica@wink.com
Subject: Payment to orthodontist overdue

Hello!

We have not received your payment of \$ 300. This payment was due April 18, 2000.

Please pay now and avoid a \$ 10.00 late charge. To pay by credit card, click here:
http://padf.org/dental/fiddledds/ci/card/card_form.cgi?a=170&d=50&type=1.

If you have already made this payment, please disregard this reminder.

Did you know you can view information about your account on our web site? Please visit
www.waitonortho.com.

Wishing you a beautiful smile,
Dr. Joe Fiddle, DDS and Staff
(408) 320-7528

Please do not reply by e-mail. Call Dr. Joe Fiddle, DDS' office at (408) 320-7528 with
any questions.



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FIGURE 6.

Example mail - Recalls

From: FiddleDDS@padf.org
To: Jennifer@white.net
Subject: Time to schedule with the orthodontist!

Hello!

Dr. Joe Fiddle, DDS needs to see Jennifer Baker in August. Please call our office at (408) 320-7528 to schedule your appointment.

Please welcome Dr. Janet Evans to our office. Our practice is growing and Dr. Evans is joining Dr. Smiley. Dr. Evans comes to us from Cleveland, Ohio by way of the University of Washington Department of Orthodontics.

Wishing you a beautiful smile,
Dr. Joe Fiddle, DDS and Staff
(408) 320-7528

Please do not reply by e-mail. Call Dr. Joe Fiddle, DDS' office at (408) 320-7528 with any questions.



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Figure 7

Example mail - No Show

From: FiddleDDS@padf.org
To: john_b@aol.com
Subject: Missed orthodontic appointment!

Hello!

We missed John Baker, who had an appointment on April 16, 2000, at 9.00 am! Please call our office at (408) 320-7528 immediately to reschedule.

If you have already rescheduled by the time you read this mail, please disregard this reminder.

Did you know you can view information about your account on our web site? Please visit www.waltonortho.com.

Wishing you a beautiful smile,
Dr. Joe Fiddle, DDS and Staff
(408) 320-7528

Please do not reply by e-mail. Call Dr. Joe Fiddle, DDS' office at (408) 320-7528 with any questions.



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Figure 8

Example mail - Birthday Greetings

From: FiddleDDS@padf.org
To: maria@micros.com
Subject: Happy Birthday!

Hello!

Dr. Joe Fiddle, DDS and staff want to wish Maria Middleton a very happy birthday!

Did you know you can view information about your account on our web site? Please visit www.waltonortho.com.

[illegible]

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第7章 非線形最適化

Figure 9

DECLARATION AND POWER OF ATTORNEY**DECLARATION:**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe, I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

INTERACTIVE PATIENT-PROVIDER DATA SYSTEM AND METHOD

the specification of which (check only one item below):

 X is attached hereto.

 was filed as United States Application
Serial No. on
and was amended on (if applicable).

 was filed as PCT international application
Number on
and was amended under PCT Article 19
on (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) on which priority is claimed:

PRIOR FOREIGN/PCT APPLICATION(S) AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. 119:			
Country (If PCT, indicate PCT)	Application Number	Date Filed	Priority Claimed (Yes/No)

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application:

PRIOR U.S. APPLICATIONS OR PCT INTERNATIONAL APPLICATIONS DESIGNATING THE U.S. FOR BENEFIT UNDER 35 U.S.C. 120:					
U.S. APPLICATIONS			STATUS (check one)		
U.S. APPLICATION NUMBER	U.S. FILING DATE		PATENTED	PENDING	ABANDONED
PCT APPLICATIONS DESIGNATING THE U.S.					
PCT APPLICATION NO.	PCT FILING DATE	U.S. SERIAL NUMBERS ASSIGNED (if any)			

POWER OF ATTORNEY:

As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) with full power of substitution to act exclusively to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

Barry N. Young (Reg. No. 27,774); Timothy W. Lohse (Reg. No. 35,255); David F. Keinsmith (Reg. No. 40,050); Stephen E. Reiter (Reg. No. 31,192); Wayne P. Sobon (Reg. No. 32,438); Robroy R. Fawcett (Reg. No. 35,133); Steven R. Sprinkle (Reg. No. 40,825); William N. Hulsey III (Reg. No. 33,402); Terrance A. Meador (Reg. No. 30,298); John Schlicher (Reg. No. 28,343); June M. Learn (Reg. No. 31,238); John Oskorep (Reg. No. 41,234); Timothy N. Ellis (Reg. No. 41,734); David R. Stevens (Reg. No. 38,626); William G. Goldman (Reg. No. 42,590); Derek Westberg (Reg. No. 40,872)

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